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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/802,304

03/17/2004

Clint Miller

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EXAMINER

VO, TED T

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/802,304	<b>Applicant(s)</b> MILLER ET AL.	
	<b>Examiner</b> TED T. VO	<b>Art Unit</b> 2191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                       | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/28/08, 4/08/08(1), 4/08/08(2), 5/09/08</u> .                | 6) <input type="checkbox"/> Other: _____                          |



### **DETAILED ACTION**

1. This action is in response to the communication filed on 04/08/2008.

Claims 1-53 are presented and pending.

#### ***Information Disclosure Statement***

2. The contents of information disclosure statement filed 02/28/2008, 04/08/2008, and 05/09/2008, which are lined through fail to comply with the provisions of 37 CFR 1.98 because these contents cannot be listed in a printing patent. These contents which are the internal office actions such as a reply or a notice of allowance issued by a patent Examiner should not be listed in a printing patent.

According to 37 CFR 1.98 (a) (2) (ii) or (iv), the considered portions, i.e. with the Examiner's initials will be listed in a printed patent:

- (ii) Each publication or that portion which caused it to be listed, other than U.S. patents and U.S. patent application publications unless required by the Office;
- (iv) All other information or that portion which caused it to be listed.

Therefore, pursuant to 37 CFR 1.98, Applicants should submit the contents as U.S. patents, U.S. patent application publications, and/or pending unpublished U.S. applications.

As per request for considering the portions/contents that are the internal Examiner office actions, these portions/contents **are considered by the Examiner**, but they are lined through because of 37 CFR 1.98 (a) (2) (ii) or (iv).

### *Response to Arguments*

3. The claimed have been amended with newly added limitations. All Applicants' arguments to the rejection of claims based on these newly added limitations have been considered, but not persuasive. Applicants direct their amendment to defining a data structure of a data model in which each entity represents that represents a complex environment. However, the data model remains as an object model that has entities or components where each of these has fields containing information for representing associations and relationships among the objects as in generally defined as a data object, an entity, in UML shown by Muller.

The use of "arbitrarily complex environment", for a data model cannot make this matter be distinguished from an entity such as "person" that is associated in an object model that is typical used UML as the designed language for generating a data structure. The Claims direct to the data model and the use of a structure language to describe such a data structure. The claimed features appear having the data model if there is any difference then it is only in name or shape.

All the Applicants' arguments filed in the remarks on 04/28/2008 have been considered but are moot in view of new ground of rejection.

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 21-30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are improperly dependent to the claim 15 which is in a different scope with the claims.

7. Claims 40-45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are improperly dependent to the claim 6 which is in a different scope with the claims.

***Claim Rejections - 35 USC § 101***

8. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

9. The claims 31-39 are rejected under 35 U.S.C 101 because the claimed invention is directed to non-statutory subject matter.

As per Claims 31-39:

Claims 31-39 recite a software product: “A software product capable of instructing a computer on a computer-readable medium, wherein the computer has a computer memory and a processor, wherein the software product comprises”. The elements of the software product are instructions.

The word “capable” used in “A software product capable of instructing a computer on a computer-readable medium” is intended use. It does not cause the product as being stored in “computer has a computer memory and a processor”. The claims remain being program per se.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 1-53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Robert Muller, "Database Design for Smarties Using UML for Data Modeling", Morgan Kaufmann Publishers, 1999.

As per Claim 1: Muller discloses, *A method of modeling an arbitrarily complex environment, comprising:*

**On a computer having a computer memory and a processor,**

**defining data structures for dynamically accommodating changes to the arbitrarily complex**

**environment in a data model wherein the data structures comprise components and**

**relationships** (See p. 72, Figures 6-5 and 6-6);

*representing each atomic entity* (Refer to p. 69, Entities and Attributes, and see Figure 6-5:

'person') *in the* **arbitrarily complex environment, with a component in the data model, wherein**

**each atomic entity is a logical** (UML class diagram) **or physical entity** (like "person") **in the**



*arbitrarily complex environment and wherein the component has a set of fields which contain information relating to the atomic entity associated with the component* (See in the class diagram (e.g. in p. 238, refer to the use of attributes (e.g. see p. 83)) ;  
*representing an association or a dependency between two or more components in the data model with a relationship, wherein the relationship has a name field containing a relationship name which is built programmatically and which automatically associates the relationship with two or more physical or logical entities that correspond to the two or more components; and automatically changing the relationship* (using identifier) *to reflect a corresponding change in the arbitrarily complex environment.* (i.e. UML Diagram, e.g. see in p. 115, see Figure 13-5, p. 246).

Muller does not address the data model as *modeling arbitrarily complex environment*. However, *modeling arbitrarily complex environment*, particularly is only changed in size, shape or ingredients that remain characterized with object relations of a data model.

Therefore, it is obvious to an ordinary in the art at the time of the filing to direct the UML, as disclosed by Muller characterized in an organization, to any data model, which is characterized with object relations, because the difference is only in names or shape of the models.

As per Claim 2: Muller discloses,

*The method of claim 1, wherein each component is instantiated based on a generic component type and has a set of core attributes comprising an id, a name, a description, a type, a property, and the presence of events, wherein the name field associates the component with a particular*

*atomic entity* (See p. 100, fourth full paragraph. See p. 95 and 98, each entity is defined with id, a name, a description, a type, a property, and the presence of events).

As per Claim 3: Muller discloses,

*The method of claim 1, wherein each component type is in a hierarchy of component types*  
(See Figures 11-1 and 2).

As per Claim 4: Muller discloses, *The method of claim 2, wherein each property has a data type of one or more of a string, a numeric, a Boolean, a link, a date/time and a custom type* (Refer to attributes of an entity).

As per Claim 5: Muller discloses, *The method of claim 2, wherein each property is a data structure having a name, a description and a value.*

As per Claim 6: Muller discloses, *The method of claim 2, wherein a component is related to a set of checks* (type of components, and the teaching is inherent in a generic entity such as "person"), *wherein each check is a piece of logic which performs operations* (and the checking is reads on the act of type checking as shown in p. 196)

As per Claim 7: Muller discloses, *The method of claim 6, wherein a check includes an operation for checking the status of a relationship* (See start at p. 196).

As per Claim 8: Muller discloses, *The method of claim 1, wherein each relationship type is a parent type or a subtype* (see p. 30, "inheritance").

As per Claim 9: Muller discloses, *The method of claim 1, wherein each relationship comprises a name field, a description field, a property field, and a checks field* (e.g. See p. 114).

As per Claim 10: Muller discloses,

***The method of claim 6, wherein each component is represented in a component table***

(properties of OO and UML, for example, within p. 37, “TABLE Person (...), and as noted that Relational database presents tables).

As per Claim 11: Muller discloses,

***The method of claim 10, wherein each component type is represented in component type table***

(Refer to tables of relational database, and refer to the properties of OO and UML, for example, within p. 37, “TABLE TYPE ALIAS\_TYPE (...)).).

As per Claim 12: Muller discloses,

***The method of claim 11, wherein each relationship is represented in a relationship table***

(properties of OO and UML, and relational database).

As per Claim 13: Muller discloses,

***The method of claim 12, wherein each relationship type is represented in relationship type table*** (properties of OO and UML, and relational database).

As per Claim 14: Muller discloses,

***The method of claim 13, wherein the relationship table links each relationship to at least two components*** (Note the association shown is created by table links, using properties such as one-to-many).

As per Claim 15: Muller discloses,

***The method of claim 14, wherein the relationship table and the relationship type table are distinct*** (Muller discloses data structure of relational database that describes the relationship of tables, and Object model that describes the relationship class or types (p. 12). The data structure

that presents a relational database is of the tables/schemas. The tables/schemas and types of class are distinct).

As per Claim 46: Muller discloses,

***The method of claim 1, further comprising, utilizing a typing system to define the hierarchy of components and relationships*** (See all the teachings that refer to classes of UML: e.g. See p. 30).

As per Claim 47: Muller discloses, ***The method of claim 46, wherein the typing system further includes a generic model structure to define a hierarchy of components and relationships*** (See all the teachings that refer to classes hierarchy of OO using UML: e.g. See p. 30) .

As per Claim 48: Muller discloses, ***The method of claim 47, wherein a data structure is associated with the generic data model*** (refer to OO data model, or see p. 8).

As per Claim 49: Muller discloses,

***The method of claim 48, wherein the data structure associated with the generic data model is stored utilizing a table schema*** (refer to mapping within OO/schema, e.g. see p. 159)

As per Claim 50: Muller discloses, ***The method of claim 49, wherein the table schema does not change with an addition of a new data structure or types of data structures*** (Miller shows its adding OO does not changes the Database data structure. See p. 12).

As per Claim 51: Muller discloses,

***The method of claim 1, wherein each of the relationships or components has a type, wherein the type is a category of the relationships or components and wherein the relationships or components type has the same properties*** (See the whole reference, particularly see p. 12)

As per Claim 52: Muller discloses, *The method of claim 51, wherein the relationships or components has different values for the same properties associated with the type* (Refer to attributes).

As per Claim 53: Muller discloses, *The method of claim 52, wherein the relationship or component type further includes a subtype, wherein the subtype inherits all the properties of the relationship or component type* (See p. 30, “inheritance”).

As per Claims 16-30: Muller discloses the limitations of claims 16-30: see rationale addressed in Claims 2-15.

As per Claims 31-45: Muller discloses the limitations of claims 31-45: see rationale addressed in Claims 1-15.

### ***Conclusion***

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted T. Vo whose telephone number is (571) 272-3706. The examiner can normally be reached on 8:00AM to 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Wei Y. Zhen can be reached on (571) 272-3708.

The facsimile number for the organization where this application or proceeding is assigned is the Central Facsimile number ~~571-273-8300~~.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC 2100 Group receptionist: 571-272-2100. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTV  
June 19, 2008

/Ted T. Vo/  
Primary Examiner, Art Unit 2191